IN THE DRAWINGS

Proposed formal drawings containing new Figures 7 and 8 are enclosed for the Examiner's approval.

REMARKS

Ever since their introduction to North America in 1988, via the ballast water of a transatlantic freighter, zebra mussels have spread through many lakes and rivers in the United States and Canada. In many locations, prior art water intake systems for power plants, industrial plants and water treatment plants, which for many years were more than adequate, no longer provide satisfactory performance, as they are readily clogged by these organisms. Since these systems use size restricted openings to physically prevent fish from passing through, the dilemma is that any openings large enough to prevent clogging by zebra mussels, will also be too large to physically prevent fish from passing through. This is a comparatively new problem, and most of the citations describe structures designed long before this problem arose.

The inventors of the present invention have solved this dilemma by the use of large openings which do not clog easily, and which are therefore too large to physically prevent fish from passing through, but which possess a geometry such that they present an aversion to fish. For example flow passages, which are long in comparison to their width or diameter, will produce a greater "confined space" perception and thus a significantly greater psychological aversion in fish than similarly sized holes in a panel or series of panels. Thus, even though the fish could go through the flow passages, they don't, and yet the passages are large enough that they can be made to be resistant to clogging by zebra mussels. This is not obvious to someone with ordinary skill in the art.

Thus the present invention relies on perception to bring about an avoidance response, rather than physically excluding fish. There are several advantages of this perceptual barrier, as it is less prone to biofouling, much easier to maintain, and consequently more cost-effective.

This idea of bringing about aversion in the minds of fish, so that they avoid passing through the passages, readily distinguishes the present invention from the prior art methods of excluding fish. The following examples cited by the examiner all rely on physically preventing fish from passing through and are thus very susceptible to clogging (for example by mussels, algae, attached weeds, or other aquatic organisms).

Wyckoff 1,825,169 This describes an arrangement of slats and barriers to divert fish,

along with a small flow of water, into a side channel; fish are physically prevented from swimming with the main flow by the size of the interstices between the slats: (page 2 lines 54-59)

"**Fish** which habitually oppose the current **are prevented from passing through** the interstices of **the grate** by regulating the **slats** thereof so as to **provide spaces between the same insufficient to accommodate the fish**."

Tozier 1,178,428 This describes a thin plate-like structure with small holes which are concealed from the fish by vertical channels. In addition, the openings are such as to prevent the fish from passing through:(see lines 48 - 51)

"The fish failing to see the openings **which are of such size as to prohibit their passage** do not make any attempt to pass the barrier and the minnows or small fish are diverted by the ribs which conceal the openings. "

Kirby 1,376,889 This describes an arrangement of dams to distinguish between regular flow and silk-laden storm flow. Fish are excluded on the basis of their size: (see page 2 lines 57 - 61)

"I have shown the aperture 15 as **provided with bars 16 to prevent the escape of fish** from the lake 1, and have shown the apertures 8-8 as provided with teeth 17 for the same purpose, the latter being located below these apertures and projecting horizontally through the stream **so as to prevent fish from leaping** the current without preventing minnows from entering the lake." Is

Vinsonhaler et. al. 2,826,897 This describes a louver system for use in a stream of flowing water, the screen being arranged at a small angle (e.g. 12°), to the flow direction. Its effectiveness relies both on the presence of the flowing water, as well as a physical barrier presented to the fish (so that it would be much less effective in a lake or similar body of water) :

(Column 3, lines 5 to 11)

" A spacing of more than three inches results in a slight increase in the number of fish passing through the system 2. Therefore a **spacing of one to three inches is recommended** for most installations. **Spacing in individual installations is dependent upon** quantity and size of the

debris in the water, **the size** and species **of the fish** 4 to be saved, the velocity of the water and the allowable head loss."

Because of the importance of this feature in distinguishing the present invention from the prior art, claim 1 has been modified to emphasize that the present invention does not physically prevent fish from passing through the flow passages. This change should clearly show that present invention has not been anticipated by Wyckoff, Tozier, Kirby, Vinsonhaler et. al., or even Powell.

The other citation, **US 6 474 265 (Powell)** does not say anything about fish. The only reason to believe that his invention has anything to do with fish is his use of the word "aquarium". He certainly does not describe a structure remotely resembling that of the present invention. He merely uses two perforated sheets clipped together to divide an aquarium into two parts.

It is acknowledged that the examiner was correct in objecting to multiple dependent claim 13 being dependent on another multiple dependent claim. Thus claim 13 has been amended to correct this.

It is acknowledged that the examiner was also correct in objecting to claims 8, and 9 for lacking antecedent basis for the sleeves. As the examiner correctly observed, these claims should have been made to depend on claim 7 instead of claim 6. These two claims have been amended accordingly.

One additional drawing sheet has been produced with new Figures 7 and 8 to show the alternative embodiment of flow passages in the top and bottom portions of the porous dike. None of the existing figures have been modified in any way. It is expected that the new figures should address the examiner's objection to the drawings. To maintain disclosure consistency in connection with this amendment, the applicant wishes to amend the disclosure by:

replacing paragraph [0008] with,

> In drawings which illustrate by way of example only (a) preferred embodiments of the invention,

and adding the following sentences immediately after paragraph [0014]

Figure 7 is a cross-sectional view showing a water intake protected by a porous dike constructed in accordance with an alternative embodiment of the present invention.

Figure 8 is an elevational view of a section of the porous dike of Figure 7.

Claims 7 - 11 have been rewritten to be independent of claim 1 and should now be considered allowable.

The applicant believes that the issues raised by the examiner have been adequately addressed in this response and respectfully requests reconsideration of the present application.

Favourable reconsideration and allowance of this application are respectfully requested.

A Claim Fee Calculation Sheet authorizing payment of any excess claim fees is enclosed. The Commissioner is authorized to charge any deficiency or credit any overpayment in the fees for same to our Deposit Account No. 500663. A signed copy of this page is enclosed if required for this purpose.

A Petition for an Extension of Time requesting an extension of one month for filing the subject response is enclosed. The Commissioner is authorized to charge any deficiency or credit any overpayment in the fees for same to our Deposit Account No. 500663. A signed copy of this page is enclosed if required for this purpose.

Executed at Toronto, Ontario, Canada, on February 21, 2005.

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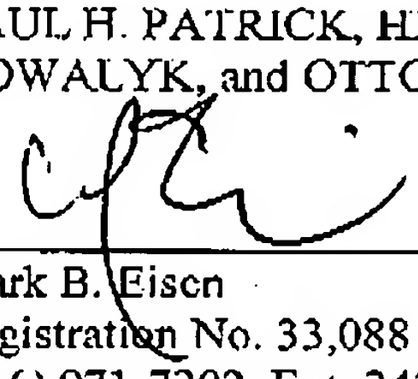

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Encl. Duplicate of signature page
New Figures 7 and 8
Petition for Extension of Time (in duplicate)
Claim Fee Calculation sheet (in duplicate)

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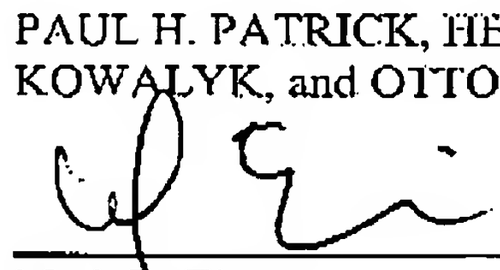

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